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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,088	10/21/2003	Harald Kaspar	58136US004	4837

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EXAMINER
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HU, HENRY S

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 07/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/690,088

Applicant(s)

KASPAR ET AL.

Examiner

Henry S. Hu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on Amendment of April 4, 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. Applicants' faxed **amendment** filed on April 4, 2005 was received. It is noted that such an amendment was filed in response to the Examiner's **2<sup>nd</sup> non-final** office action. No claim was amended or added at all. **Claims 1-14 are now pending.** An action follows.

### **Response to Argument**

2. Applicant's argument filed on April 4, 2005 has been fully considered but they are not persuasive. The focal arguments related to the patentability will be addressed as follows: In view of the Applicants' argument on pages 5-6 of Remarks, both two 103 rejections are sustained.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. The limitation of parent *Claim 1* of the present invention relates to the process of making a *copolymer of fluorinated olefin and hydrocarbon olefin* selected from ethylene, propylene and mixtures thereof, the process comprising a *substantially emulsifier free aqueous emulsion polymerization* of said fluorinated olefin and said hydrocarbon olefin and wherein said process comprises copolymerization of said fluorinated olefin and hydrocarbon olefin *in the presence of fluoropolymer particles and/or in the presence of fluorinated liquid* that is in a form suitable for improving the co-polymerization of said fluorinated olefin and hydrocarbon olefin. See other limitations of dependent *Claims 2-14*.
5. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCarthy et al. (US 5,955,556) in view of Tournut et al. (US 4,025,481) for the reasons set forth in paragraphs **4-6** of office action dated 12-2-2004 as well as the discussion below.

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6. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oxenrider et al. (US 5,453,477) in view of Tournut et al. (US 4,025,481) for the reasons set forth in **paragraph 7-9 of office action dated 12-2-2004 as well as the discussion below.**

7. **Applicants:** Applicants have claimed in **Claim 1** an unexpected way of obtaining a copolymerization process to make **a copolymer of fluorinated olefin and hydrocarbon olefin,** wherein a combination of a **substantially emulsifier free aqueous emulsion polymerization** and the presence of **“fluoropolymer particles” and/or “fluorinated liquid”** is required to improve the copolymerization.

With respect to **103 rejection** for Claims 1-14 by McCarthy/Tournut, the Applicants allege that McCarthy fails to appreciate the reaction with **fluoropolymer particles** either present or formed in situ in the reactor. Although Tournut may use the halogenated hydrocarbons as stabilizing agent, **Tournut’s process is not a substantially emulsifier free aqueous polymerization** since the emulsifier is a necessary component (see column 2, line 31-39). Therefore, there is no ground for obviousness in this regard.

With respect to the other **103 rejection** for Claims 1-14 by Oxenrider/Tournut, the Applicants allege that Oxenrider’s process is only a suspension polymerization only as page 6 of Remarks, while Tournut’s process is an aqueous emulsion polymerization. Therefore, there is no ground for obviousness in this regard to link Tournut and Oxenrider.

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8. **Examiner:** No claim was amended or added by the Applicants in the amendment. After the Examiner has thoroughly studied the Applicants' argument on pages 5-6 of Remarks, the present amendment would not change the patentability.

Regarding the two **103(a) rejections**, each of the two primary references including McCarthy and Oxenrider has disclosed surfactant-free copolymerization but is silent about adding fluorinated liquids and/or fluoropolymer particles in the polymerization process. In a very close examination, McCarthy has disclosed the preparation of a stable aqueous self-dispersible fluorinated copolymer dispersion by surfactant-free aqueous emulsion polymerization of a combination of fluoroolefin(s) and nonfluoroolefin(s) to obtain up to 48% polymer solids in water due to improved conversion rate of monomer to polymer.

Oxenrider has disclosed the preparation of stable aqueous fluorinated copolymer dispersion by surfactant-free aqueous "suspension polymerization" of a combination of fluoroolefin(s) and nonfluoroolefin(s) due to improved wettability of polymer particles. However, Oxenrider does not rule out using an aqueous emulsion polymerization as an option in his purpose (see column 1, line 50 – column 2, line 3).

9. With respect to key argument as "Tournut's process is quite different from that of either McCarthy or Oxenrider due to the fact that Tournut's process is not a substantially emulsifier free aqueous polymerization. For instance, the emulsifier is a necessary component", the rejection is sustained after further consideration. Tournut have disclosed using **an inactive**

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halogenated saturated hydrocarbon such as difluorochloromethane or trifluorotrichloroethane to be useful as a stabilizing agent in the aqueous emulsion polymerization with the polymerizable fluorinated monomer in order to obtain a stabilized aqueous dispersion and a lower molecular weight since such a halocompound can also be generally useful as chain transfer agent (column 2, line 10-31 and 50-68; abstract, line 1-15).

10. In a close examination, a stabilizing agent still works, as a stabilization agent no matter surfactant is existed or not. The difference may be on the degree of reactivity. For instance, a free radical initiator would be a free radical initiator in various polymerization conditions or types as long as it is not poisoned by other component. In summary, Tournut have indeed disclosed using such a stabilizing agent in the process of aqueous polymerization.

In a close view on the limitation of Claim 1, the presence of “fluoropolymer particles” and/or “fluorinated liquid” is required to improve the copolymerization. Therefore, either fluoropolymer particles” or “fluorinated liquid is required to be presented. The Examiner has further found that the monomers used by McCarthy may include the claimed “liquid fluorinated monomers” such as perfluoro(propyl vinyl ether) or perfluoro(methyl vinyl ether) (see column 3, line 60-61). Therefore, The disclosure of McCarthy alone may anticipate the limitation of Claim 1.

### *Conclusion*

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11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Dr. Henry S. Hu whose telephone number is **(571) 272-1103**. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The fax number for the organization where this application or proceeding is assigned is (703) 872-9306 for all regular communications.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Henry S. Hu

Patent Examiner, art unit 1713, USPTO

July 5, 2005



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